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General Manager,
Mobile Platforms Group
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General Manager,
PCA Components Group
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Convergence Vision

All *computing* devices *communicate*
All *communication* devices *compute*



Intel

Software Goal:
Enabling the Convergence of Computing and Communication



- Write Once, Run Best on ***Intel Processors***
- Enable ***Occasionally Connected Computing***
- Drive standards to be ***comprehensive & widely adopted***

Intel

Write Once, Run Best on Intel Platforms



Intel may make changes to specifications, product descriptions and plans at any time, without notice

Write Once, Run Best on Intel Platforms

	2002	Q1 '03	Q2 '03	Q3 '03	Q4 '03
VTune™	6.1	VTune 7.0			
	1.0J Enterprise				
Compilers	6.0	7.0	XScale™		
Performance Libraries	5.2 Math Kernel		6.0		
	2.0 IPP	3.0	3.0 for PCA		
Threading Tools			1.0		

Announcing:
IPP V3.0



Intel may make changes to specifications, product descriptions and plans at any time, without notice

Enable

Occasionally Connected Computing

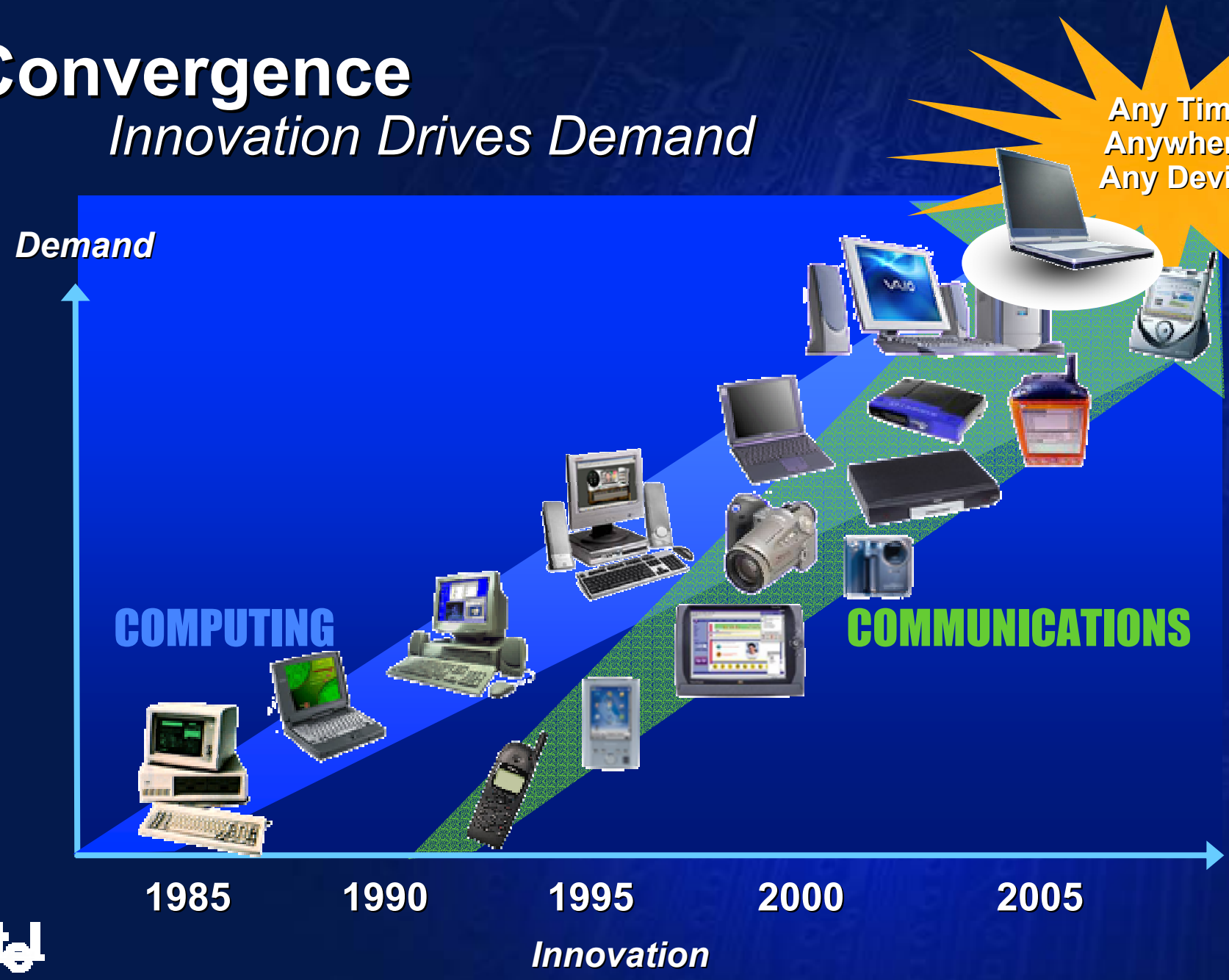
- Optimized for
 - ***Connection state and size of pipe***
 - ***Device and Processor Capabilities***
- Standards are necessary to realize vision
 - ***Device Characterization***
 - ***Security***
 - ***Manageability***

Intel

Demo

Convergence

Innovation Drives Demand



Mobility is a Growth Driver

16% CAGR
through ***2006***

Sleek, lightweight
notebooks are majority
of ***mobile PC*** market



90% *WLAN-enabled*
by ***2005***

Intel

Users are Demanding

True Mobility







Connectivity

Long Battery Life

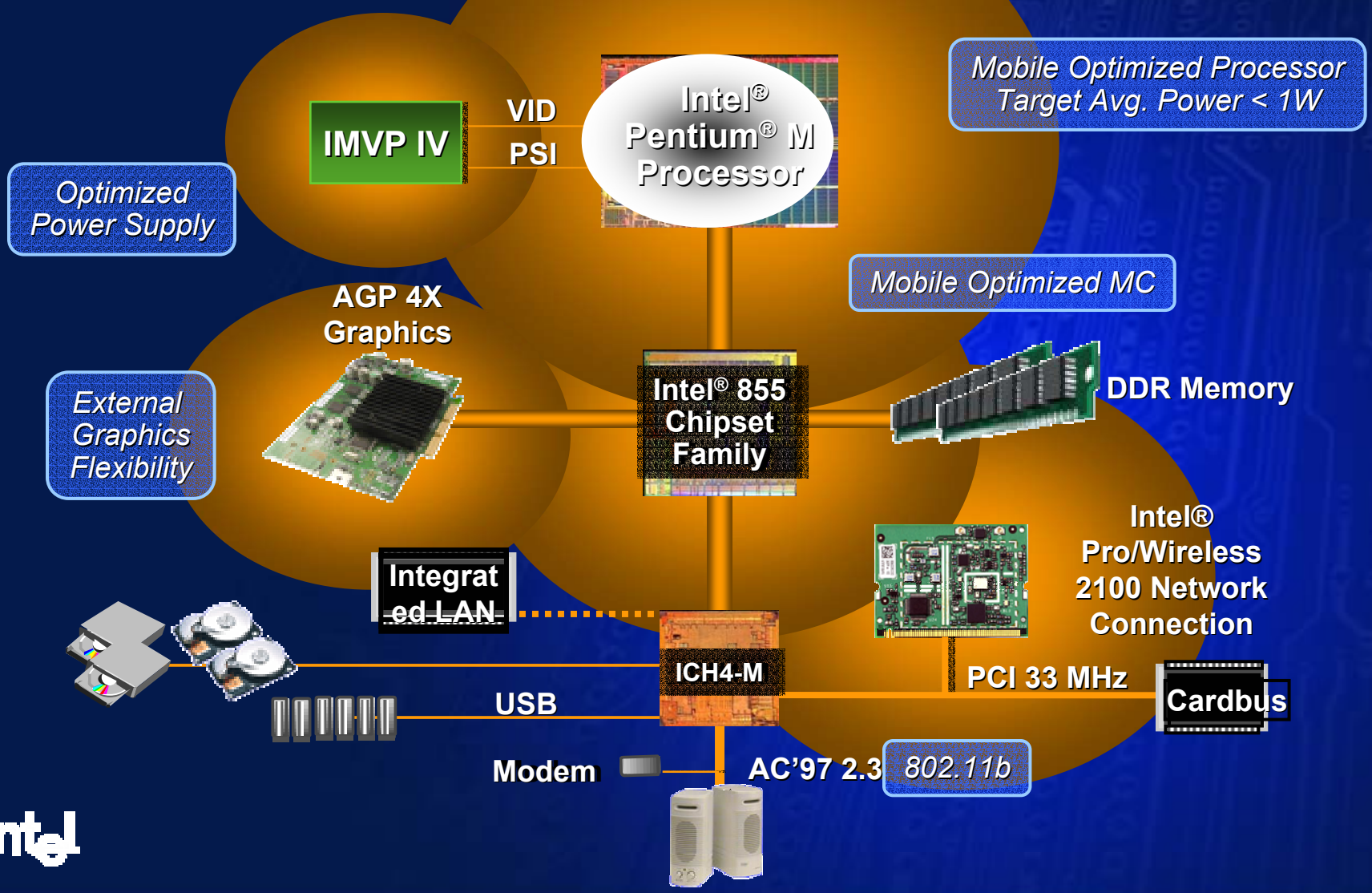
Cutting-Edge Performance

Sleek Systems

Intel

Intel® Centrino™ Mobile Technology

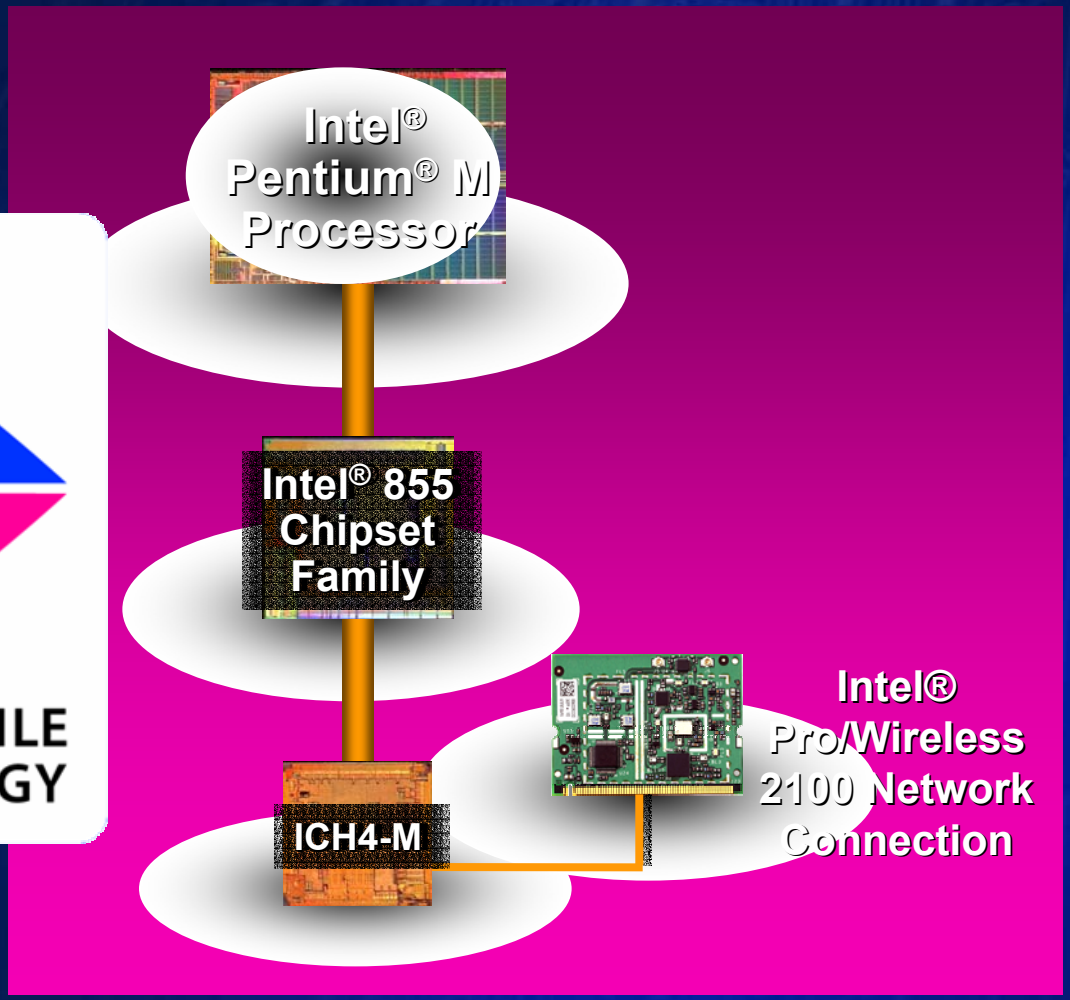
Designed to Work Together



Intel® Centrino™ Mobile Technology

Addressing User Demands

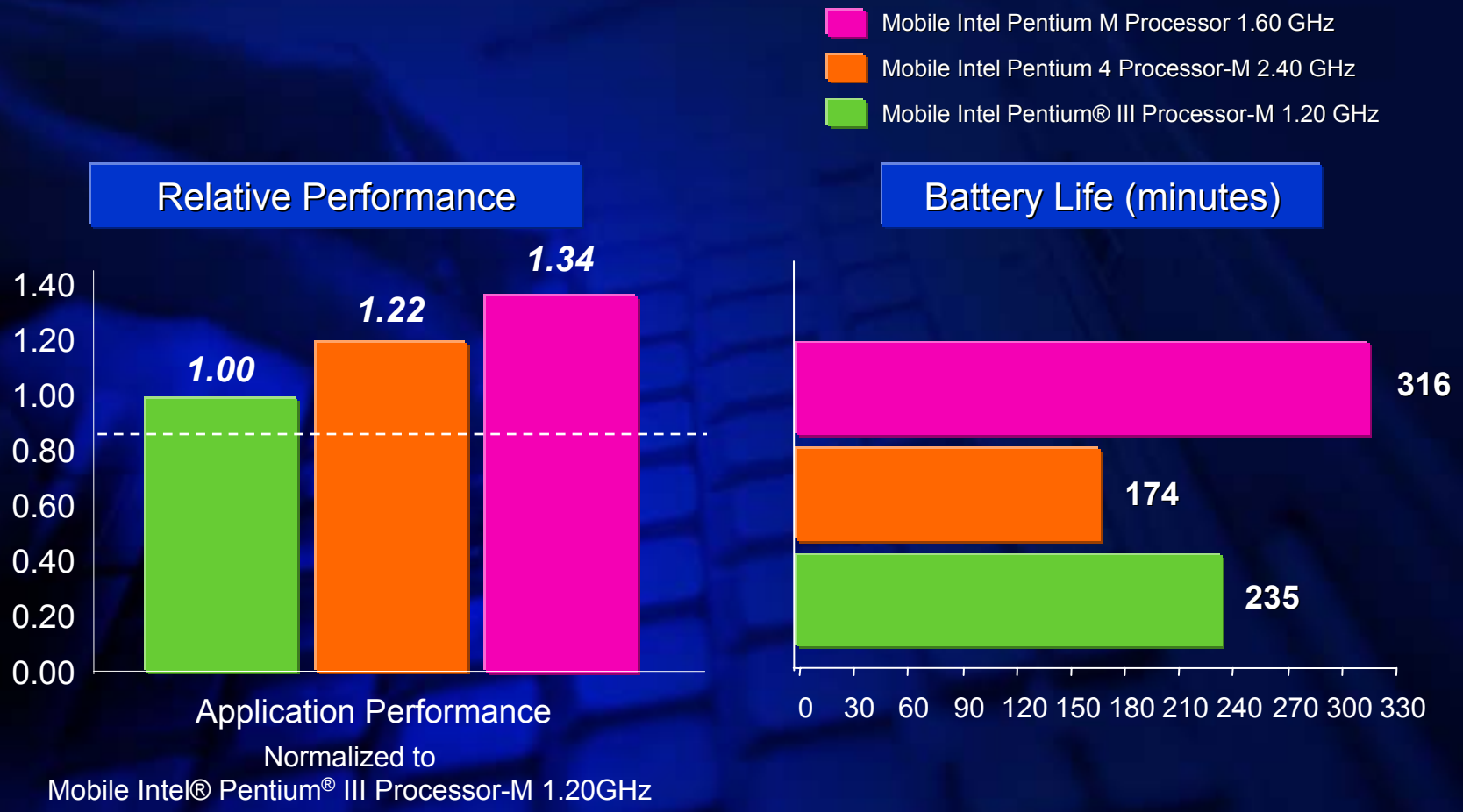




Intel

Bakeoff Demo

Enables Outstanding ***Performance*** and ***Battery Life***



Source: Intel. Configuration: Intel® Pentium® M Processor 1.60 GHz, Intel 855PM chipset, 512MB PC2100 DDR266, ATI* Mobility* 7500, Battery Capacity 48WHr; 14.1" TFT 1024x768. **Mobile Intel® Pentium® 4 Processor-M, 2.40 GHz**: Intel 845MP chipset, 512MB PC2100 DDR266, ATI* Mobility* 7500, Battery Capacity 48WHr; 14.1" TFT 1024x768. **Mobile Intel® Pentium® III Processor-M 1.20 GHz**, Intel 830M chipset, 512MB PC133 SDRAM, S3* SuperSavage* IXC 1014, Battery Capacity: 43WHr; 14.1" TFT 1024x768. **All Platforms**: 40GB hard drive 5400 rpm, 1024x762x32bit color, FAT32 File System. *Windows* XP* Professional.*

1 System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations. See http://www.intel.com/products/centrino/more_info for more information.

***Other names and brands may be claimed as the property of others.**

Integrated *Wireless LAN* and Breakthrough *Form Factors*

Intel® PRO/Wireless Network Connection

- **Cisco security standards support***
- **Ease of Use with available PROSet software**



Intel

Coexistence Demo

Integrated ***Wireless LAN***
and Breakthrough
Form Factors

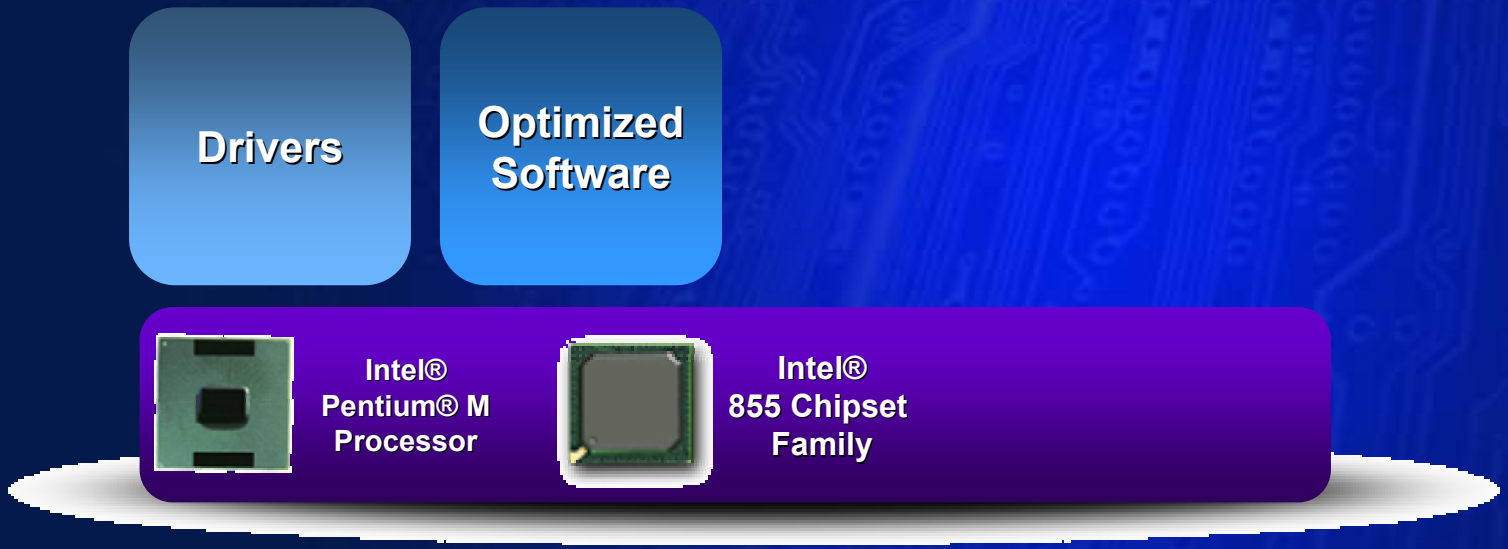
Improved thermals
enable
Cool, Sleek designs



Intel

Coexistence Demo

Tackle *Validation Challenge*
For A *Better* User Experience



Tackle *Validation Challenge* For A *Better* User Experience

VPN Functionality

Stable Image Technologies
Brand Verification Tool

Drivers

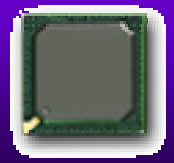
Optimized Software

Security

Wireless H/W



Intel® Pentium® M Processor



Intel® 855 Chipset Family



Intel® PROWireless Network Connection

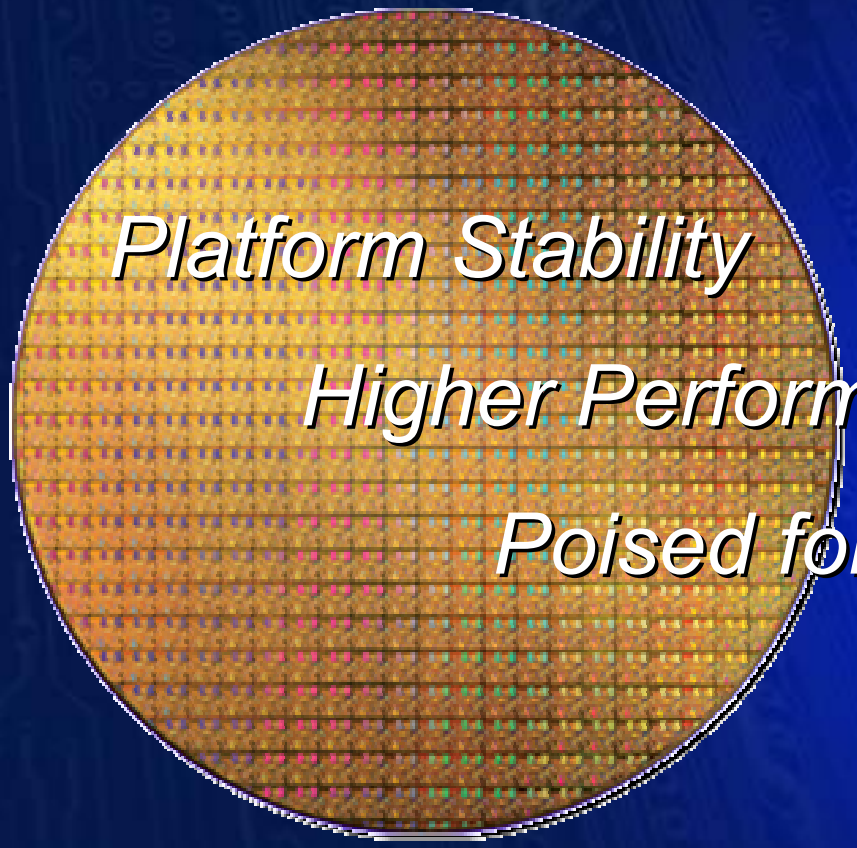
Intel

Enabling Hotspots
Worldwide

Video

Dothan: Innovation Continues Throughout 2003

90nm Process Technology & 300mm Wafer Size



Platform Stability

Higher Performance & Lower Power

Poised for High-volume Ramp

Intel

2004 Newport Concept Platform Vision:

Meet evolving

Mobile Usage Needs







Maintain network connection while mobile

Perform useful tasks with lid closed

Enable all-day battery life

Intel



Extended
Battery Life Progress

Components Innovation

Software Optimizations

Alternative Fuel sources

Intel

Show & Tell

Enhanced Mobility:

Opportunity in Perspective







Intel

Our Opportunity





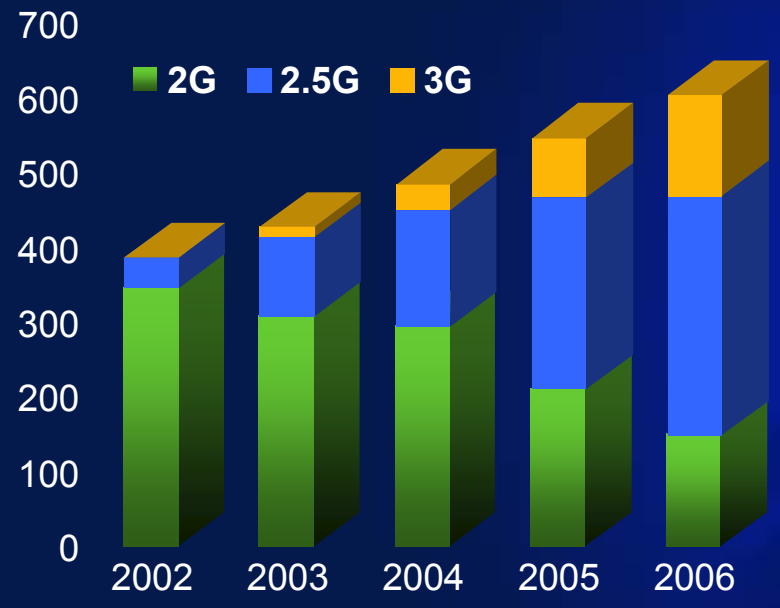


- Accelerate innovation along mobility vectors using Intel® Centrino™ mobile technology
- Drive demand through new usage models

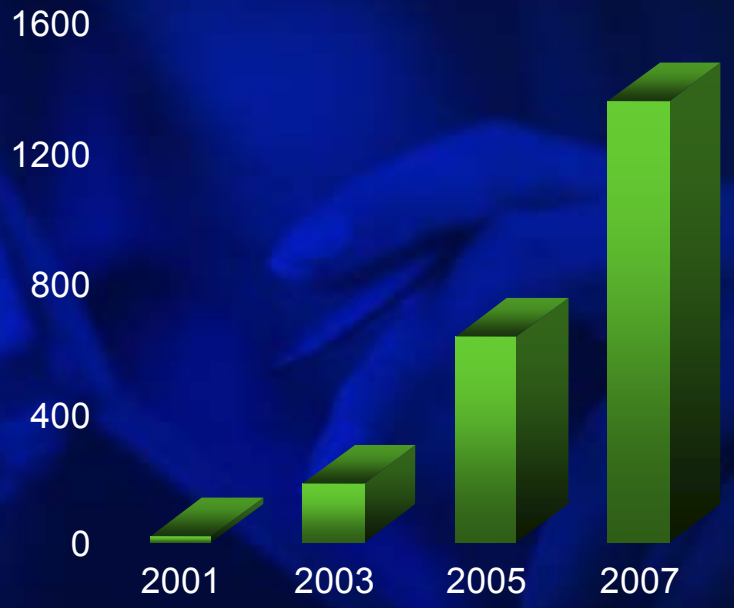
Intel

Opportunity: Emerging
Personal Converged Device

Worldwide Handset Sales*
Millions



Worldwide 2.5G and 3G Subscribers*
Millions



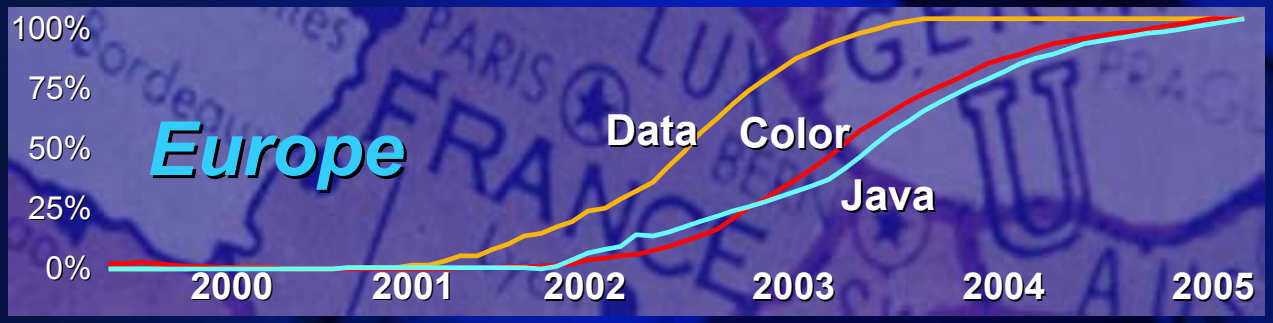
*Source: IDC, Gartner, ARP Group

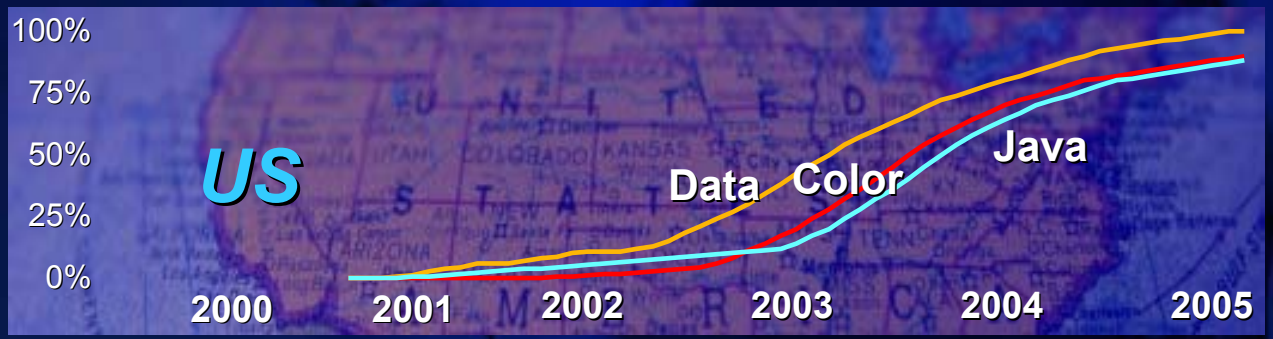
Opportunity: *Rich Applications & Services*

Adoption Rates



And it is Worldwide





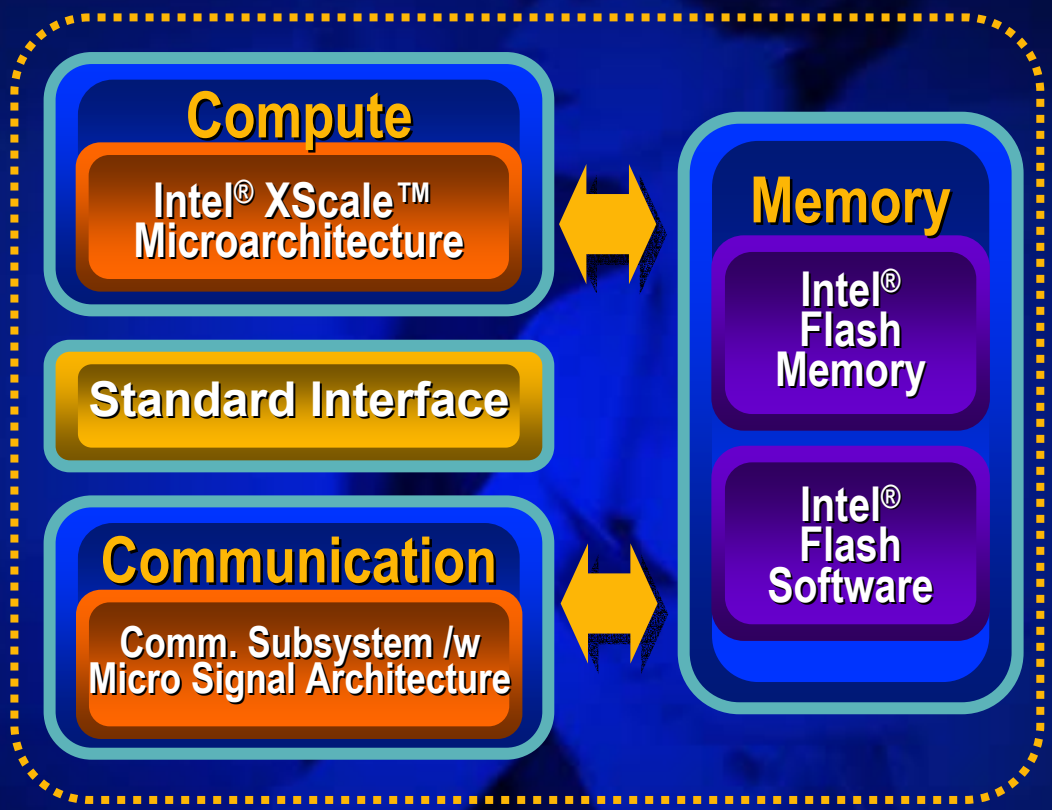
Sources: NPD Group

Intel® PCA: Driving Cellular Software Spiral

Separates Development for End-User Applications and Communications Protocol

Enables flexible, scalable Applications

Eases portability of apps and services



Intel

Accelerating Convergence in *Handheld*

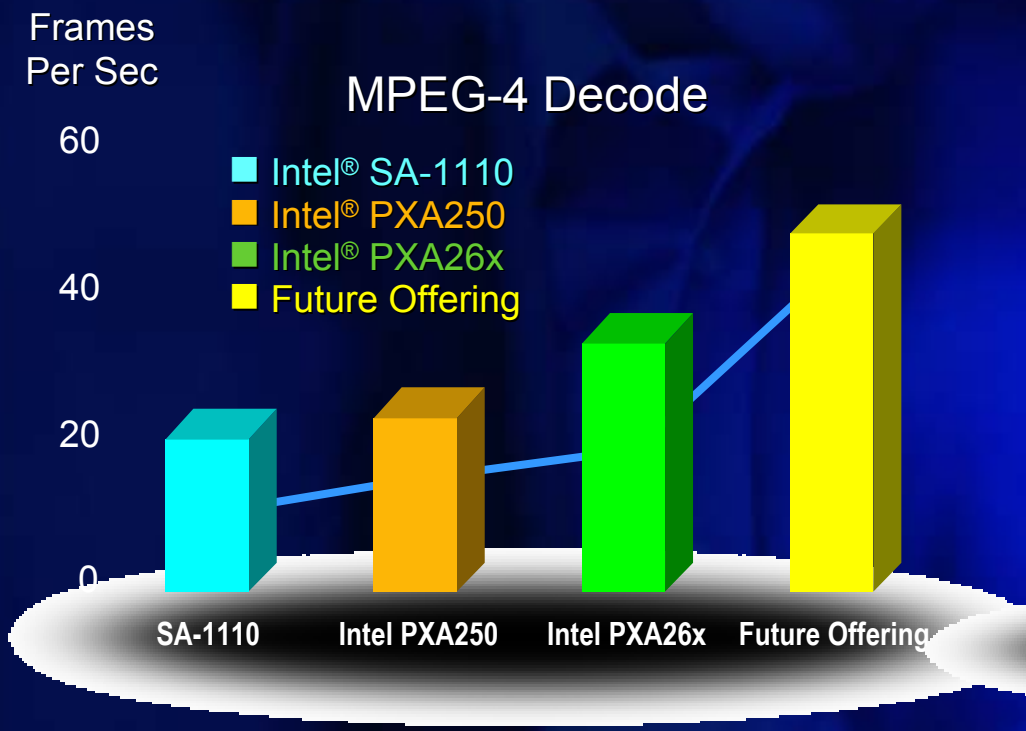


Accelerating Convergence in *Handheld*

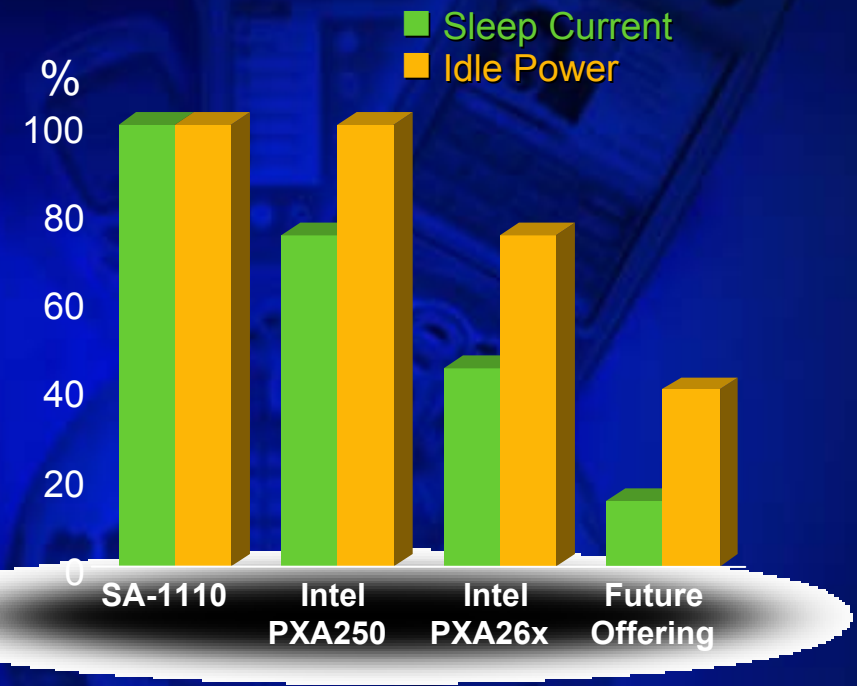


Intel® XScale™ Microarchitecture

Performance Leadership



Low Power Leadership



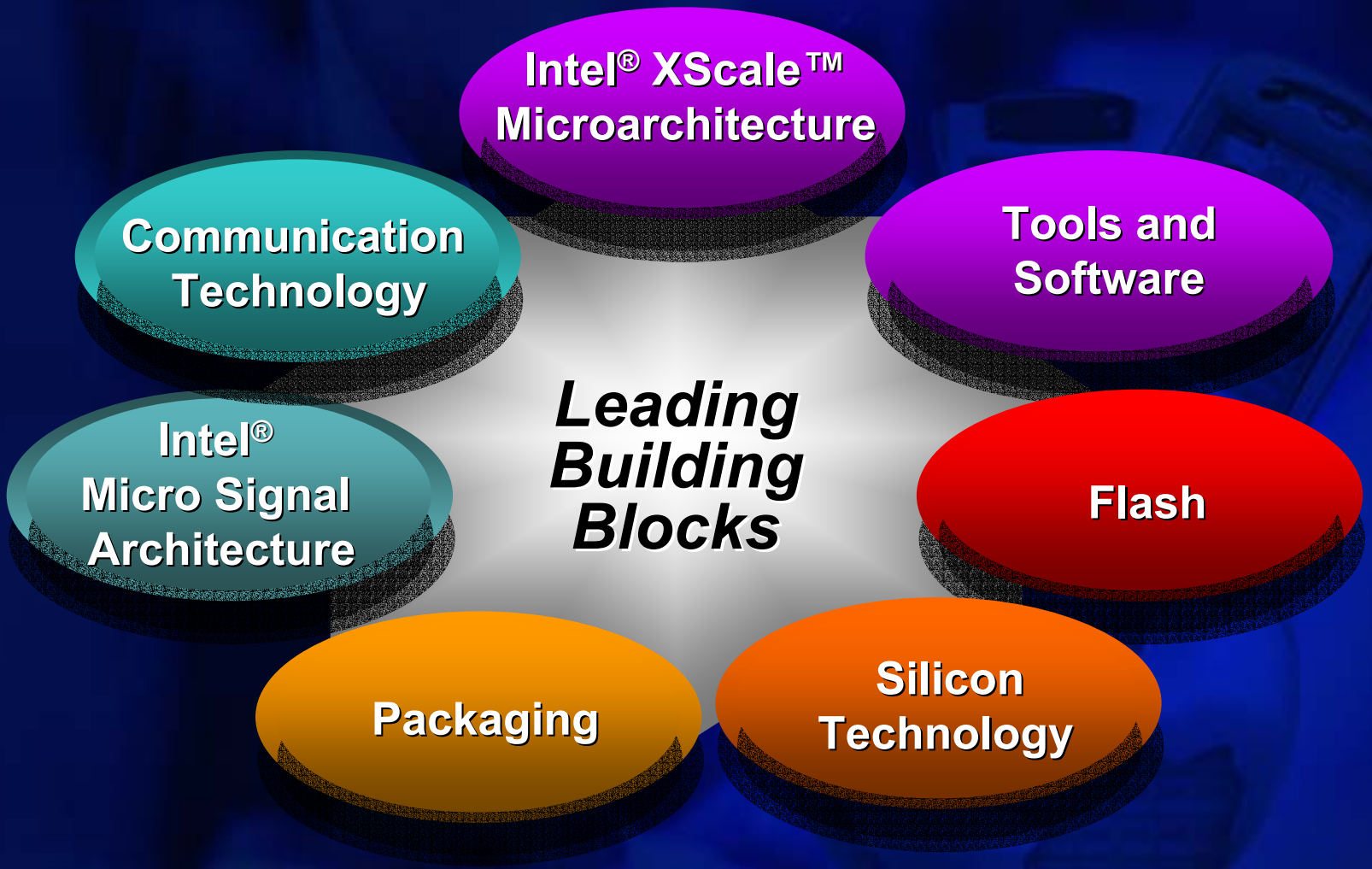
Source: Intel Corporation using MPEG-4 decode sample code for the Intel® Integrated Performance Primitives for MPEG-4 decode.

Test Configuration: For MPEG-4 decode: PPC2002 OS; Intel SA-1110, Intel PXA250, Intel PXA26x results were measured on devices running PPC2002 with 240x320 16-bit display; future offering results measured with 480x640 16-bit display. Intel SA-1110 results measured on HP iPaq* 3650 device. Intel PXA250 and Intel PXA26x results measured on Intel DBPXA250 test platform at 400 MHz, respectively. Future offering results are estimates only measured on a test platform at 400 MHz. Results shown are average of three runs. For sleep and idle current: Intel SA-1110, Intel PXA250, Intel PXA26x results were measured on Intel DBPXA250 test platform at 206 MHz, 200 MHz, and 200 MHz, respectively. Future offering idle and sleep are estimates only and not verified on actual silicon. Power is based on processor core estimates only and not other components in the system. Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance.

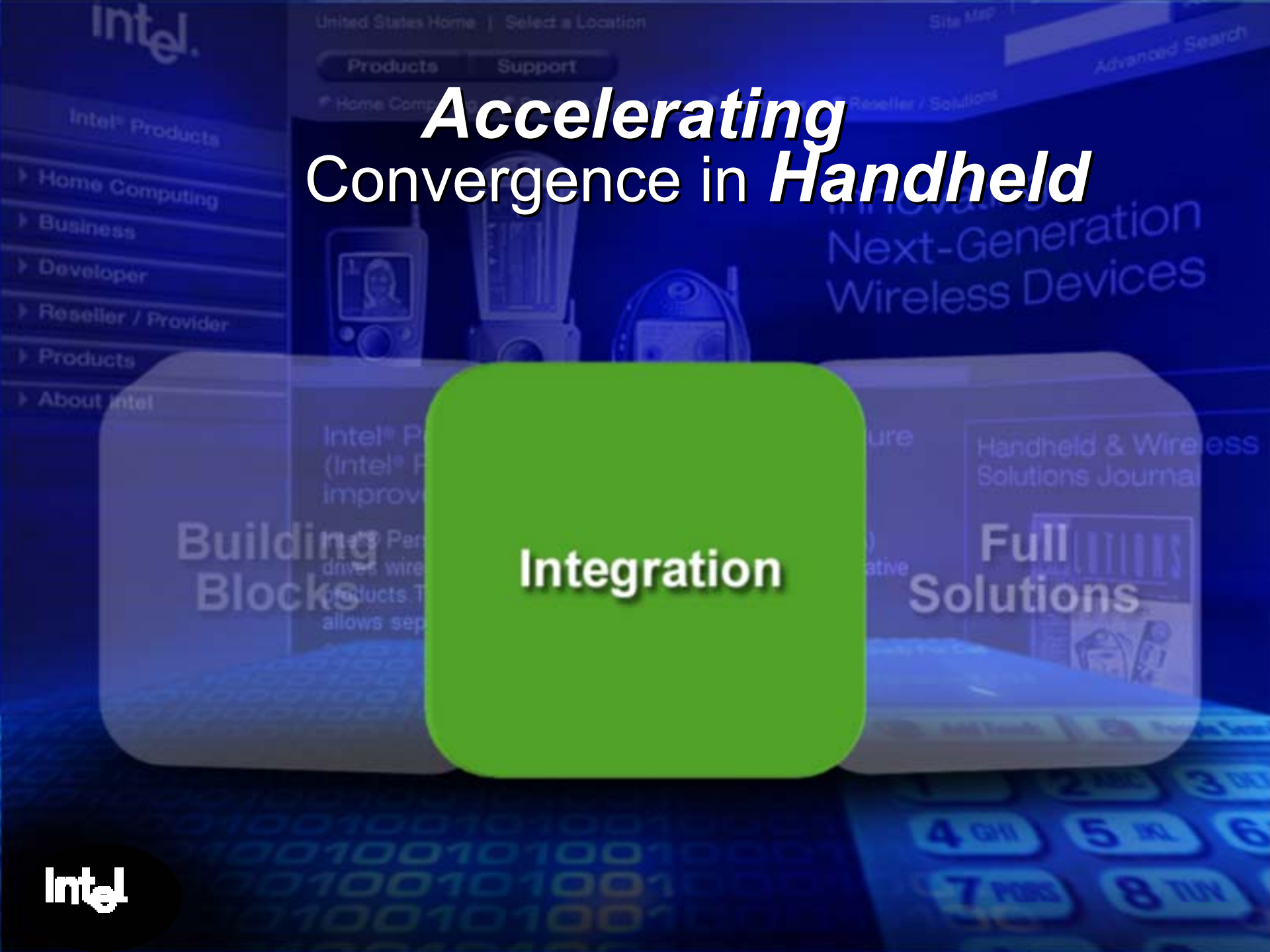
Intel

DEMO

Intel Delivers *Complete Portfolio*



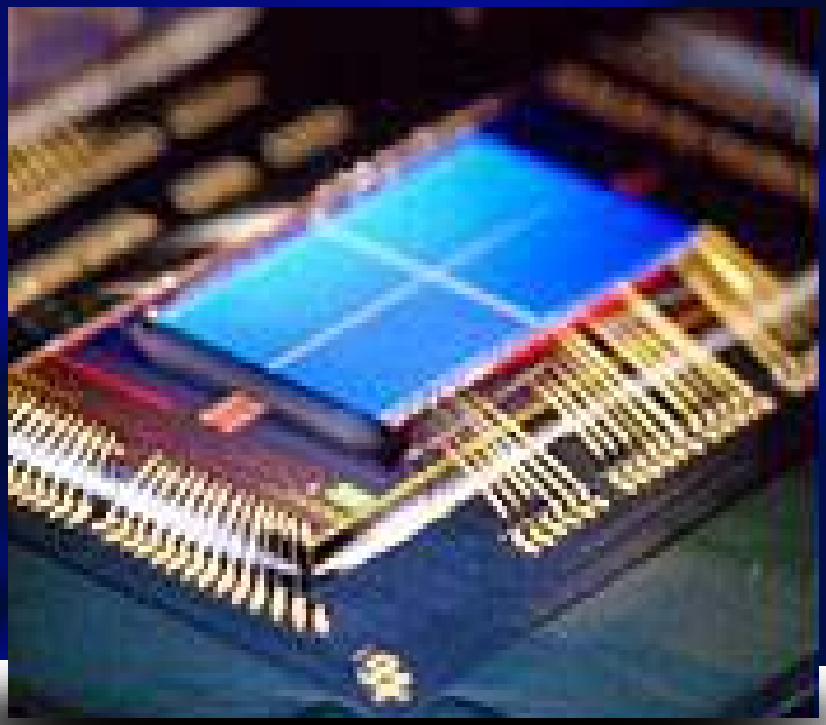
Intel


Accelerating
Convergence in Handheld
Integration
Building Blocks
Full Solutions
Next-Generation Wireless Devices
Intel Products
Home Computing
Business
Developer
Reseller / Provider
Products
About Intel
Products
Support
United States Home | Select a Location
Advanced Search
Handheld & Wireless Solutions Journal

Smaller Footprint by Stacking

*Intel is **#1***
at Stacking

Over **100M**
Units Shipped



2 Die Stacked CSP

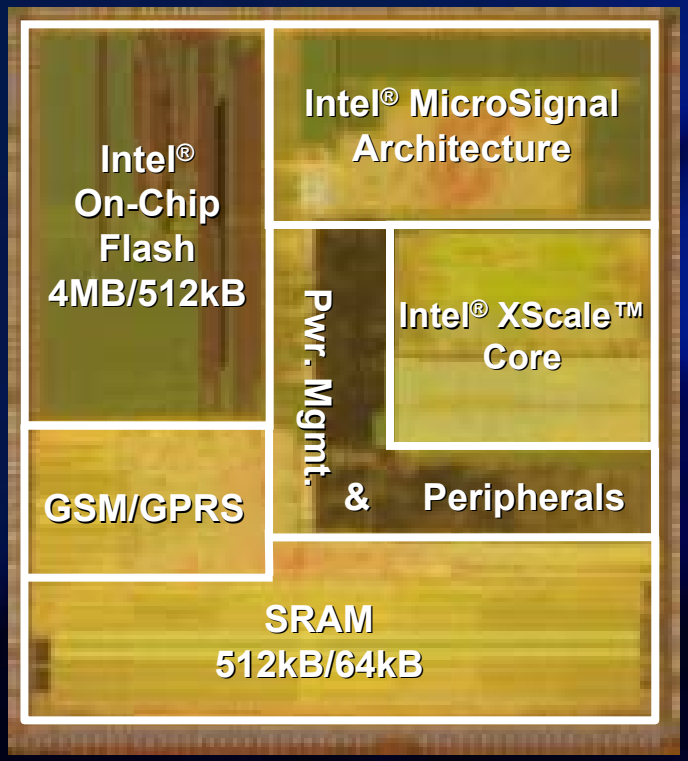
Intel

DEMO

Intel® PXA800F Cellular Processor

Wireless-Internet-On-A-Chip

Industry's 1st single-chip GSM/GPRS solution for Enhanced Applications Capabilities in Mainstream Phones



Intel® 0.13µ Flash + Logic Process Technology

High Performance/Low Power Intel® XScale™ Technology

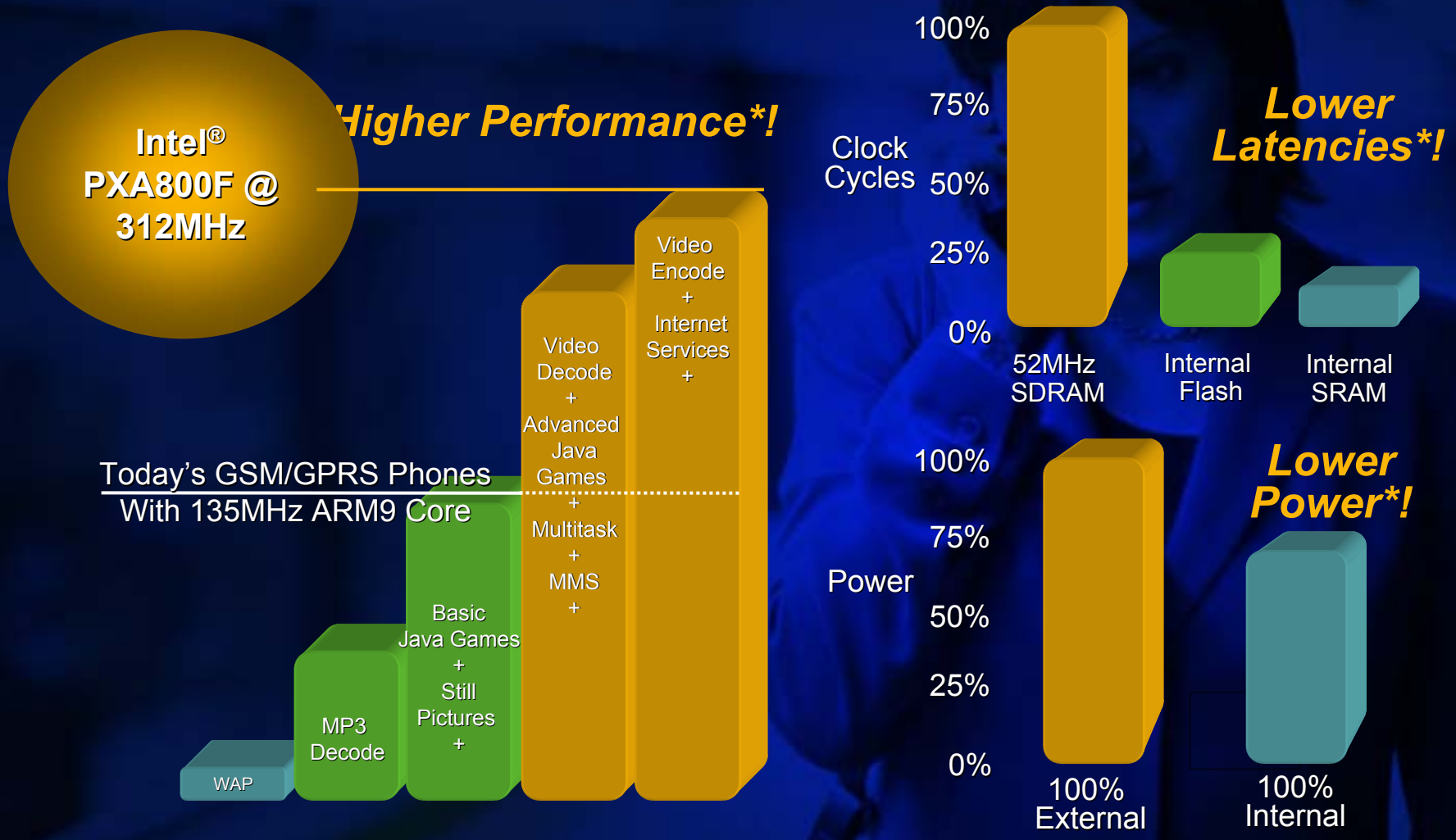
Intel® Micro Signal Architecture

High Density Intel On-Chip Flash

Integrated Power Management and Peripherals

Intel

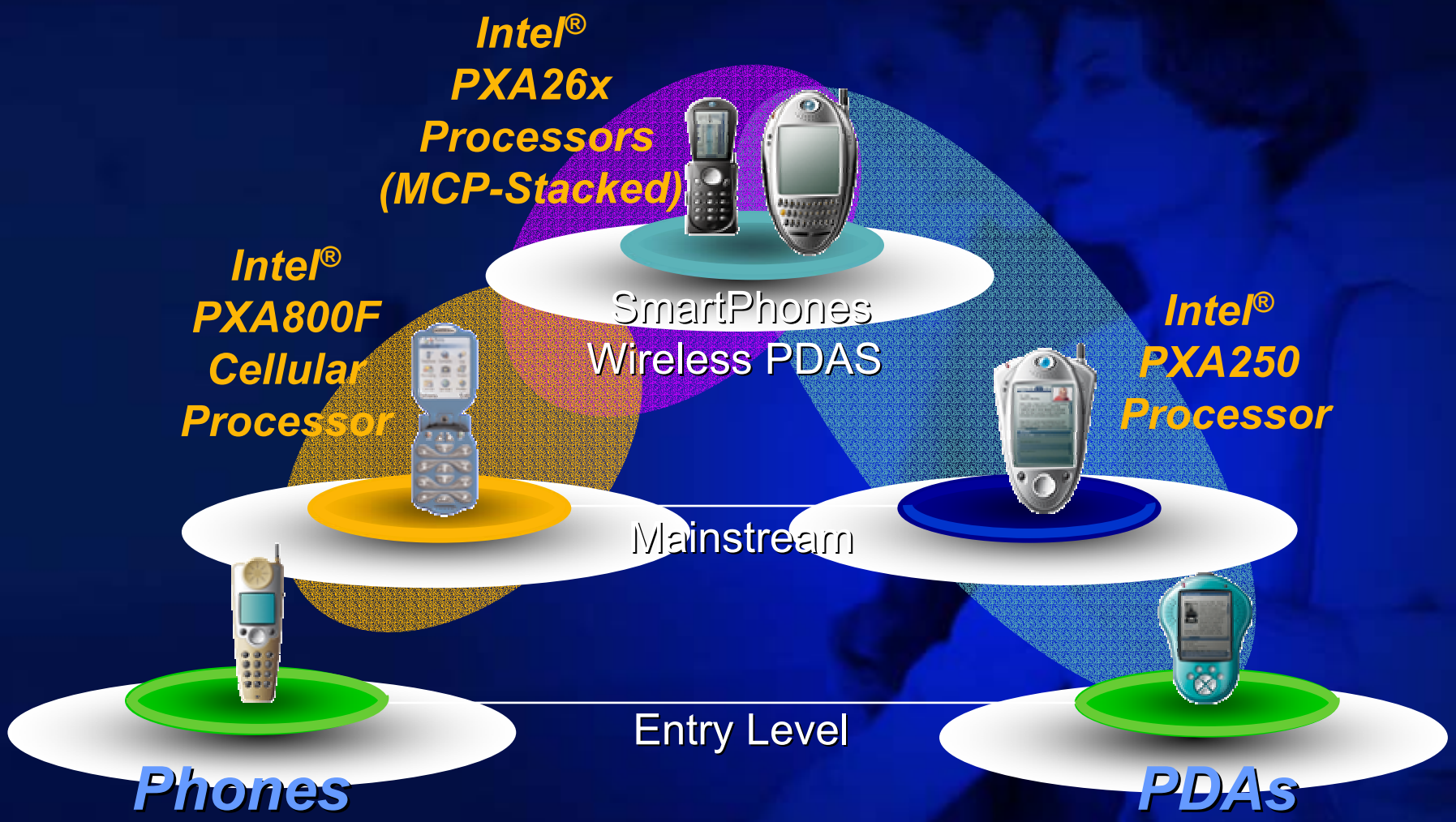
Intel® PXA800F: Accelerating Mobility through Integration



*All estimates are provided for planning purposes only and are subject to change without notice. Clock cycles for "lower latencies" graph assumes Intel® PXA800F cellular processor XScale™ technology-based core running at 312MHz. For "Lower Power" graph, external power includes Intel® PXA800F in active mode plus external SDRAM power consumption; for internal power, graph assumes Intel® PXA800F in active mode only.

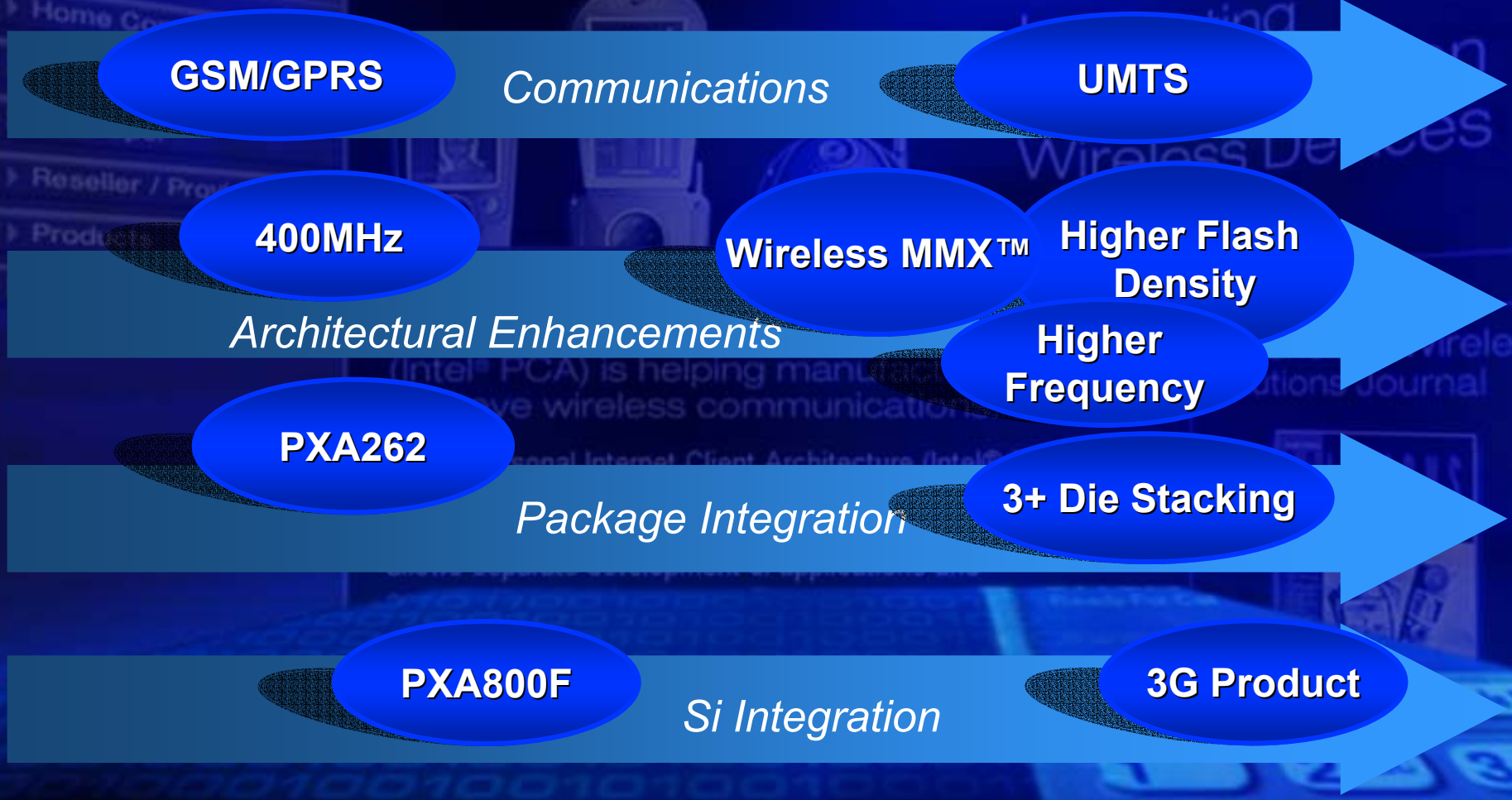
DEMO

Intel® PXA *Product Breadth*

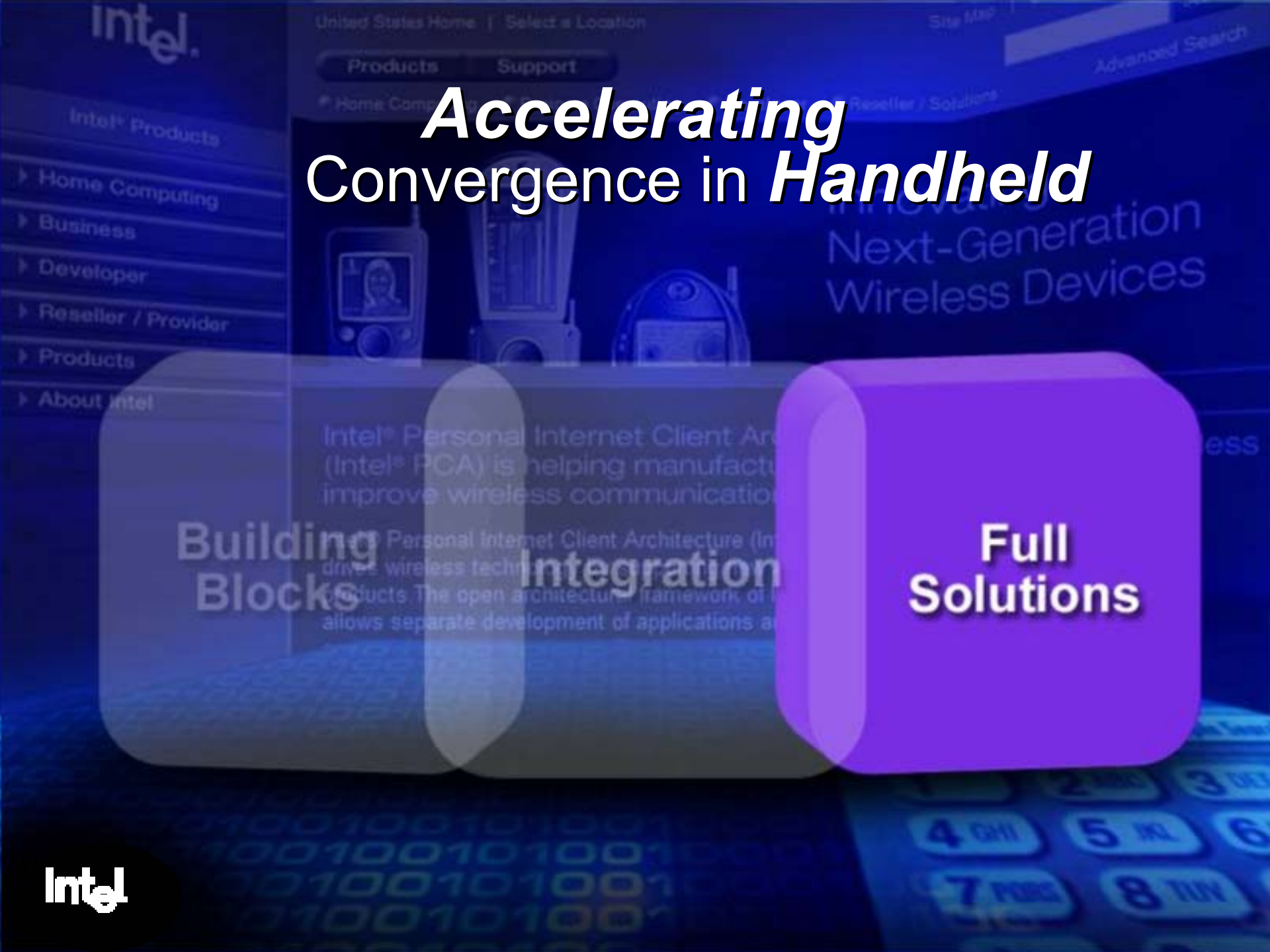


Intel

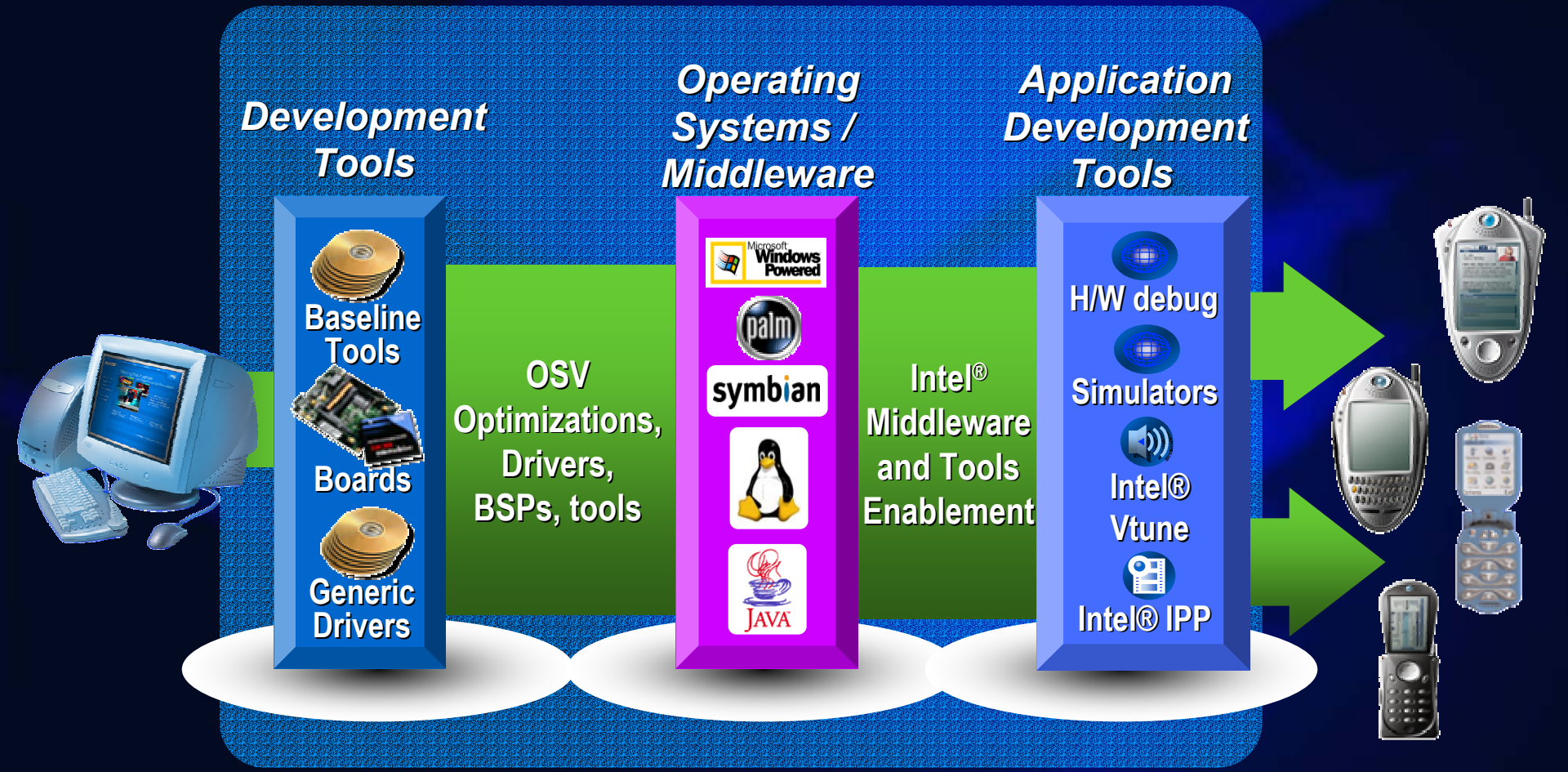
Future *Advancements*



Accelerating Convergence in *Handheld*



Intel® PCA Development *Ecosystem*



Intel

Your ***Opportunity***

Emerging Personal Device for the ***Billion People***

Architectural Landscape Shaping ***Now***

Innovate, Excite and Delight based on ***Intel® PCA***


2003 Desktop Platforms
2004 Desktop Platforms
Intel

Continuing to *Architect* for *Balanced Performance*

CPU performance is a given

Today Users Demand Moore plus More…

Other parts of the platform *must* keep pace

- *I/O*
- *Memory*
- *Audio*
- *Storage*

2003
Platform Solutions



Intel

Next Generation Prescott Processor

300mm Wafers, 90nm process-based

NetBurst™ Microarchitecture Enhancements

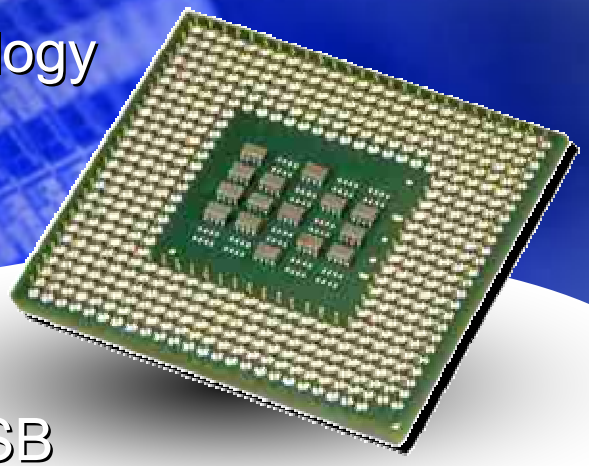
Enhancements to Hyper-Threading Technology

13 New Instructions

1 MB L2 Ca

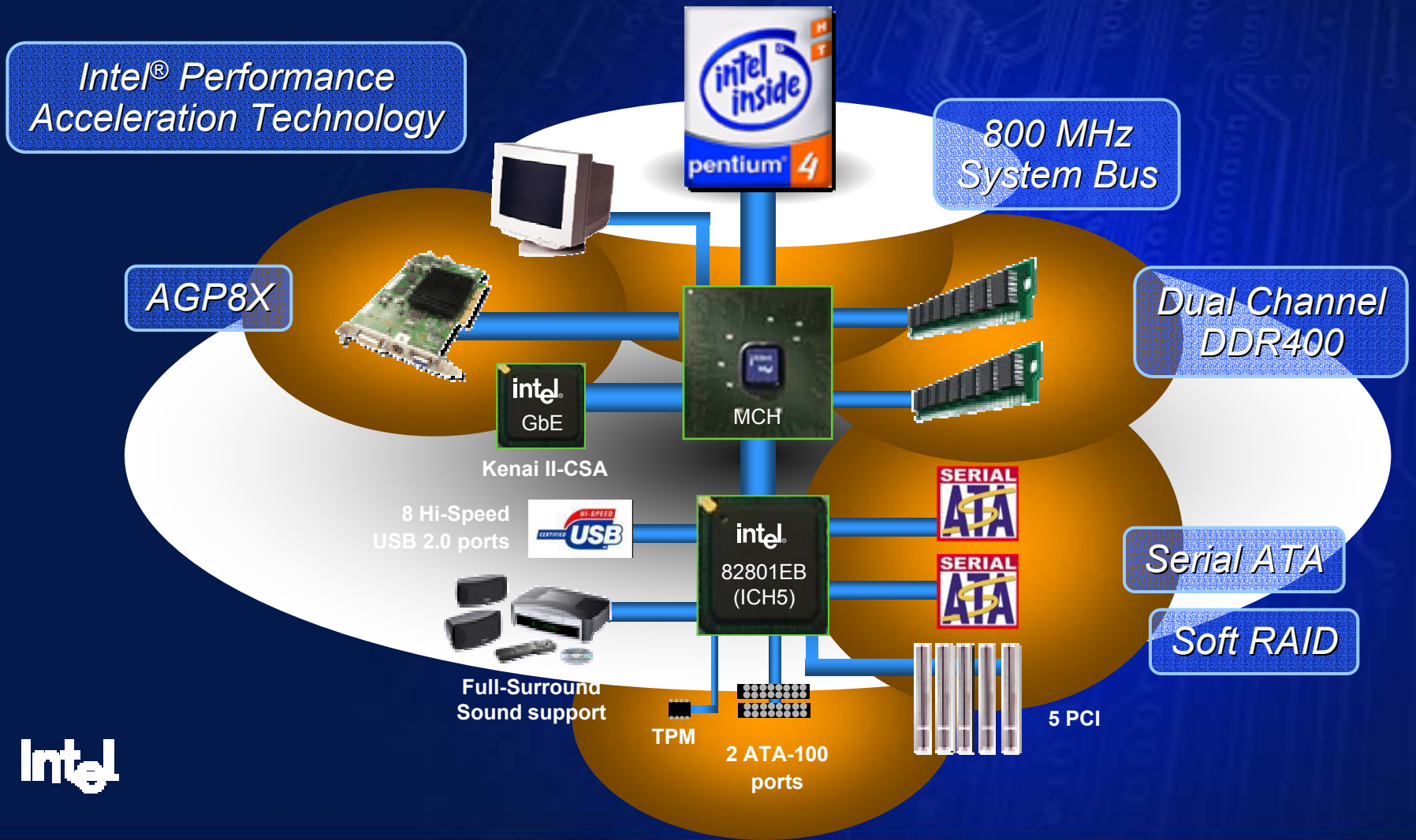
800 MHz FSB

Canterwood & Springdale Platforms



Canterwood:

Ultimate High Performance Platform







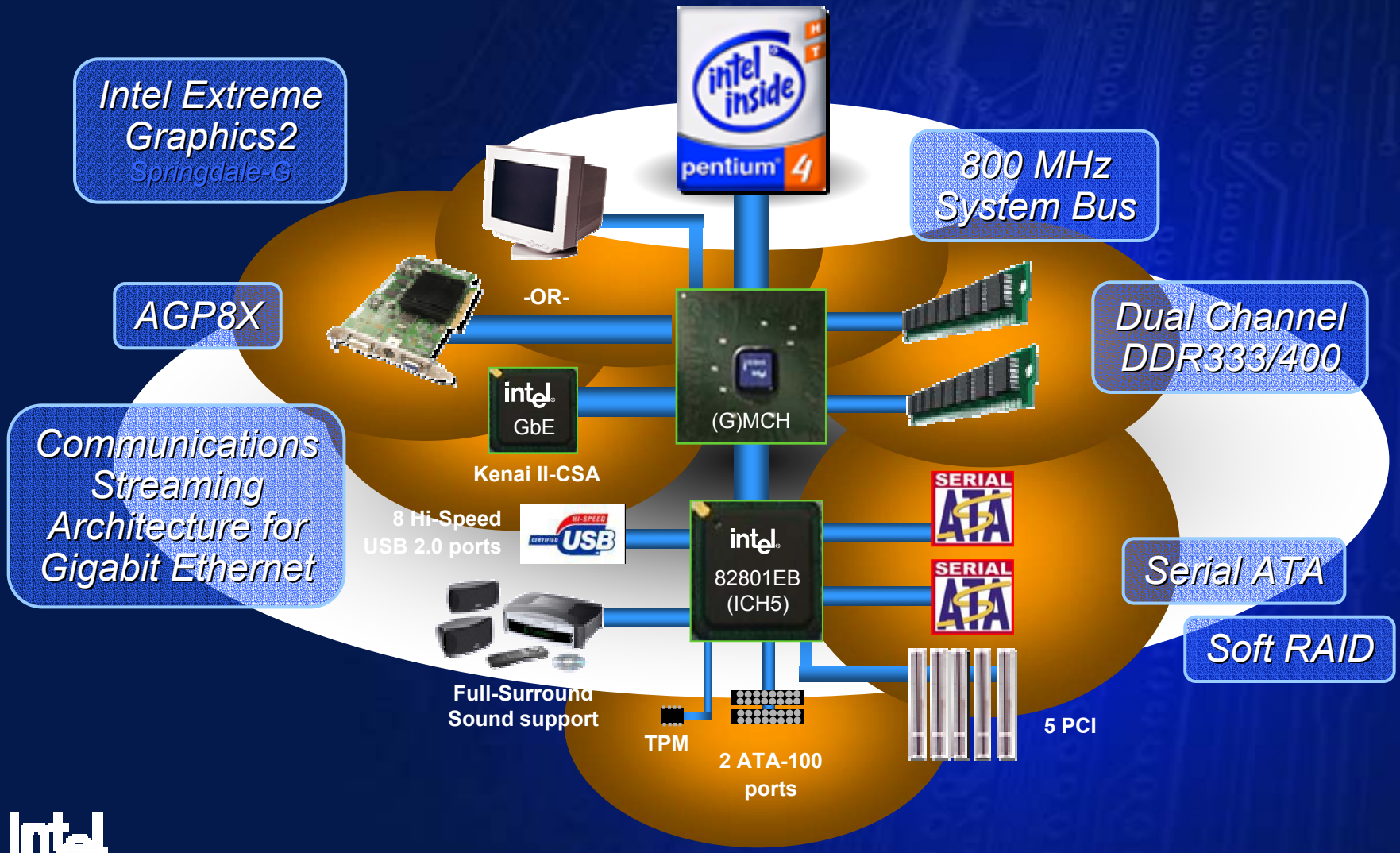




DEMO – Canterwood CE-PC and Linksys DMA

Springdale:

Outstanding Mainstream Platform











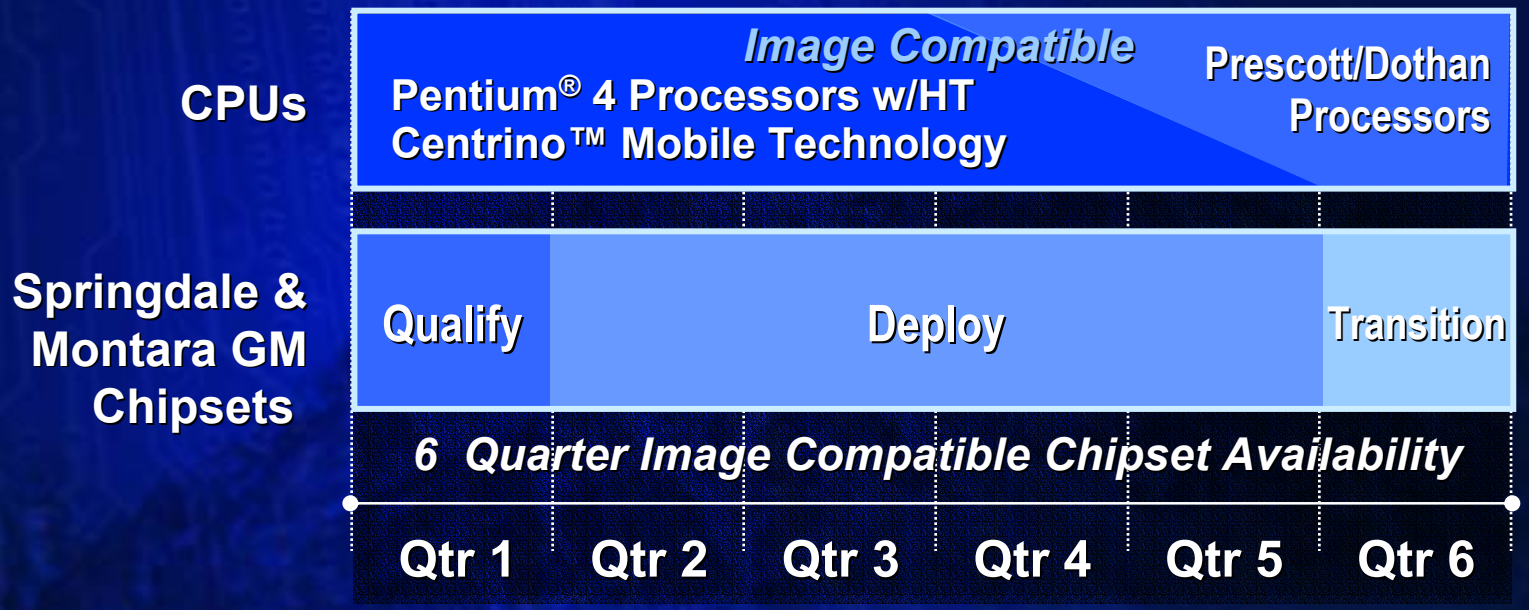
Intel

DEMO – Springdale-G Stable Platform for Corporate

2003 Stable Platform:

Introducing Granite Peak

- **Granite Peak is Intel's New Stability Program**
 - **Expansion of Intel's Stable Image Technology**
 - **NO image changes from chipsets for 6 quarters**



1+4+1 Stability for both Desktop & Mobile Platforms

Intel

2004
Platform Solutions



Intel

Introducing the 2004 Concept Platform:

Powersville

Next Generation Processor Codenamed Tejas

*Next Generation I/O with PCI Express**

DDR2 Memory

PCI Express Graphics*

Enhanced Security

Cool/Quiet Small FF

Next Generation Audio



Intel

Demo

Introducing the

Next Generation Audio:

Azalia

Intel

Improved end-user experience for

Entertainment, Gaming & Communications

Digital Home



Dynamic DVD-Audio **and** ***SACD***

Multi-Stream **capabilities**

Dolby* Digital **and**
THX* Surround EX **capable**

Intel

Improved end-user experience for

Collaboration & Communication

Digital Office

Improved ***Speech Recognition***

Enables ***Telephony (VoIP) Conferencing*** and ***IM applications***

Reduced platform ***cost*** and ***improved support***



Intel

Digital Home

Entertainment & Gaming



Digital Office

Collaboration & Communications



Spec available to the industry

First products in 2004

Intel

Corporate Small Form Factor Technology Vehicle:
Marble Falls



3GIO-M **"New Card" slot**

Based on *Big Water* program

Collaboration **support**

Small Form Factor **optimized**

One Generation Ahead

Platform Leadership

Demo





Client Technology
Around the World

Video

Architectural Solutions ***PLUS***



Intel® PCA

Intel® X-Scale

Silicon Technology

Software Solutions

Platform Solutions

Tools & Enabling

= Total Client Solutions


Intel
Developer
Forum